— MID TUBE ONLY — SHIP JULY 29th

Work Order ID 72319

Friday, July 22, 2011 10:27:21 AM

Item ID: D3391-023
Revision ID:
Item Name: Mid Tube Assembly

Start Date: 7/22/2011 **Start Qty:** 1.00
Required Date: 7/29/2011 **Req'd Qty:** 1.00
Reference:

Accept **Setup Start** **Stop**

Cust Item ID:
Customer:

Approvals: **Process Plan:** **Date:** **Tooling:** **Date:**
QC: **Date:** **SPC (Y/N):** **Date:**

Run Start **Stop**

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
100	Skidtubes	0.00							
Skidtubes		0.00							

Draw Nbr	Revision Nbr
D3391	Rev H

Skidtubes

Memo

1-Cut tube to finish length as per Dwg D3391

2-Identify as D3391-023

3-Drill pilot holes using DT8796 (Do not drill "B" holes) and drill only 1 fwd saddle hole on one side only as per Dwg D3391

4-Open saddles and GHW holes to Ø0.375" exept for fwd saddle hole of detail "J"

5-Remove .030" from Fwd indexing Ridge as per Dwg D3391

6-Remove indexing ridge on Fwd & Aft end of skidtube as per Dwg D3391

7-Deburr

8-Drill #30 pilot holes using wearplate Jig DT8217 Identify Ø0.250" holes with paint marker.

9-Open wearplate holes of D3391-023 assembly detail section G-G to Ø0.250" (14 holes) as per Dwg D3391 and 2 holes in section Detail "J", do not open wearplate holes of section "J"

10-Open wearplate holes of D3391-023 assembly detail section H-H to Ø0.297" (20 holes) as per Dwg D3391

BB 11/07/25

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries

Work Order ID 72319

Friday, July 22, 2011 10:27:21 AM

Item ID: D3391-023 **Accept** **Setup Start**

Revision ID: **Stop**

Item Name: Mid Tube Assembly

Start Date: 7/22/2011 **Start Qty:** 1.00 **Cust Item ID:**

Required Date: 7/29/2011 **Req'd Qty:** 1.00 **Customer:**

Reference:

Approvals: **Process Plan:** **Date:** **Tooling:** **Date:** **Run Start**

QC: **Date:** **SPC (Y/N):** **Date:** **Stop**

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
	11-Open .375" holes to .438" ***do not open fwd saddle holes***								
	12-Locate D3391-021 in D3391-023 at 9.00" (see view z-z)								
	13- Transfer drill one fwd saddle hole only to .188" dia, transfer drill all remaining fwd saddle holes using DT 8149 locating from previusly drill .188" dia hole, using I-pins and clicos to ensure perfect allingment, open up previusly tranfer drilled pilot holes in D3391-023/-021 to 0.438" dia. in D3391-021								
	14- Transfer drill 2 wearplate holes into D3391-021 using DT8217, locating from two previusly drilled holes, drill remaining wearplate holes into D3391-021.								
	15- Locating from two fwd wearplate holes drilol remaining 6 wearplte holes in D3391-021 using DT8937								
	16- Open 2 fwd wearplate holes in D3391-023 to .250" dia.								
	17- counterbore two aft wearplate holes in D3391-021 as per dwg								
	18- Open 12 wearplate holes in D3391-021 to 0.297" dia.								
	19-Deburr and blow out all chips from inside tube								

~~RB~~ 11/02/25

N/A

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Run Start **Stop**

Approvals: **Process Plan:** **Date:** **Tooling:** **Date:**

QC: **Date:** **SPC (Y/N):** **Date:**

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
110	QC5- Inspect part completeness to step on W/O	0.00							
QC	**Memo**	0.00							
Quality Control									
120	Chemical Conversion Coat per QSI005 4.1	0.00							
HandFinish	**Memo**	0.00							
Hand Finishing									
130	QC3- Inspect Part Finish	0.00							
QC	**Memo**	0.00							
Quality Control									

11-7-27

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Required Date: 7/29/2011 **Req'd Qty:** 1.00 **Customer:**

Reference:

Run Start

Approvals: **Process Plan:** **Date:** **Tooling:** **Date:** **Stop**

QC: **Date:** **SPC (Y/N):** **Date:**

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140		0.00							
Skidtubes	Skidtubes								
Skidtubes	**Memo**	0.00							
Skidtubes	1-Open float bag holes as per dwg 2-C'sink float bag holes as per dwg 3- Prepare tube for welding 4-Bond web in place as per Dwg D3391 & QSI 015. Adhere for 12 hours) A/R Sikaflex exp: 12/01/15 batch#: 117516					x1			WL 11/07/22
150	QC5- Inspect part completeness to step on W/O	0.00				x1			BG 11/07/28
QC	**Memo**	0.00							
Quality Control									
160		0.00							
Skidtubes	Skidtubes								
Skidtubes	**Memo**	0.00							
Skidtubes	1-Weld crossbolt spacer as per dwg D3391 & QSI 004 2-grind weld flush					x1		A/R M15778	BG 11/07/28

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Reference:

Run Start **Stop**

Approvals: **Process Plan:** **Date:** **Tooling:** **Date:**

QC: **Date:** **SPC (Y/N):** **Date:**

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
170	QC10- Inspect visual per QSI004- ground welds	0.00							
QC Quality Control	**Memo**	0.00							
180	QC5- Inspect part completeness to step on W/O	0.00							
QC Quality Control	**Memo**	0.00							
185	Pressure Wash per QSI005 4.3	0.00							
HandFinish Hand Finishing	**Memo** ~~AND~~ REALODINE AS PER PAR09-043	0.00							

11.07.28

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1 6 11.07.28

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Reference:

Run Start **Stop**

Approvals: **Process Plan:** **Date:** **Tooling:** **Date:**

QC: **Date:** **SPC (Y/N):** **Date:**

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum M117745.	0.00				1	0	BR 11-7-38.	
Powdercoat	**Memo**	0.00							
Powder Coating	START TIME: 1:00 OVEN TEMPERATURE: 390° FINISH TIME: 1:30.								
200	QC3- Inspect Part Finish	0.00							
QC	**Memo**	0.00							
Quality Control									

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Reference:

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Approvals: **Process Plan:** **Date:** **Tooling:** **Date:**

QC: **Date:** **SPC (Y/N):** **Date:**

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
210	Skidtubes	0.00							
Skidtubes		0.00							
Skidtubes	**Memo**								

1- insert D3391-021 into D3391-23

2- insert T-pins into first and third fwd saddle holes

3- ON FIRST SIDE ONLY drill out 2nd and forth fwd saddles holes to 0.500" as per DSI 9364

4- remove T-pins and locate DT9415 from first and third crossbolt hole using T-pins and clekos

5- ON 2ND SIDE ONLY ream out 2nd and forth saddle hole to 0.499". Remove DT9415

6- deburr, re-alodine and blow out chips

7- press fit D3591-1 spacers using DT9416 starting from 0.500" side

install wearplates

220	QC5- Inspect part completeness to step on W/O	0.00							
QC									
Quality Control	**Memo**	0.00							

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Cust Item ID:
Customer:

Run Start **Stop**

Approvals: **Process Plan:** **Date:** **Tooling:** **Date:** **QC:** **Date:** **SPC (Y/N):** **Date:**

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
230 HandFinish Hand Finishing	HandFinishing	0.00				1	4	M 11 07 28	
	Memo Install Inserts as per Dwg	0.00							
240 QC Quality Control	QC5- Inspect part completeness to step on W/O	0.00							
	Memo	0.00							
250 Packaging Packaging	Identify as per dwg & Stock Location: SHIP	0.00							
	Memo	0.00							

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11/7/29 C

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Start Date: 7/22/2011 **Start Qty:** 1.00
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Reference:

Accept

Setup Start

Stop

Cust Item ID:
Customer:

Run Start

Stop

Approvals: **Process Plan:** **Date:** **Tooling:** **Date:**
QC: **Date:** **SPC (Y/N):** **Date:**

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
260	QC21- Final Inspection - Work Order Release	0.00							
QC Quality Control	**Memo**	0.00							

11/2/29

11-07-29

Picklist Print

Friday, July 22, 2011 10:27:19 AM

Work Order ID: 72319

Parent Item: D3391-023

Parent Item Name: Mid Tube Assembly

Start Date: 7/22/2011 **Required Date:** 7/29/2011

Start Qty: 1.00 **Required Qty:** 1.00

Comments:
IPP A 05.10.20 New Issue KJ/EC
IPP B 06.02.10 ECN773 dwg rev.D EC
IPP C 07.03.20 rev F dwg EC
IPP D 07.03.28 re-format EC
IPP E 07.10.31 ecn 1053P EC
IPP Rev:F ECN 1056 07-11-13 DD verified by: EC
IPP Rev:G 08-09-08 new process (ecn 08-510) DD verified by:EC
IPP Rev:H 08-09-10 revH as per dwg DD verified by:EC
IPP Rev: I 08-11-13 Removed steps per w/o, QC KJ verified by: ec IPP Rev:J add in seq 140 expire date &b# sikaflex DD 10.02.17 verified by:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2500-1-100 Skidtube Extrusion		Manufactured	No			100	Each	78.0000	1	1		BB 11/07/25	

Location	Loc Qty	Loc Code	
HALL	78		
37065	3		
50251	75		

D3391-021 Fwd Tube Assembly		Manufactured	No			100	Each	0.0000	1	1			
D3389-1 Web		Manufactured	No			140	Each	1.0000	1	1			

Location	Loc Qty	Loc Code	
LG	1		
71333	1		1

Ok 11/07/25

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries

Picklist Print

Friday, July 22, 2011 10:27:19 AM

Work Order ID: 72319

Parent Item: D3391-023

Parent Item Name: Mid Tube Assembly

Start Date: 7/22/2011 **Required Date:** 7/29/2011

Start Qty: 1.00 **Required Qty:** 1.00

D3681-1	Manufactured	No	160	Each	9.0000	5	5	BE 11/07/28

Spacer

Location	Loc Qty	Loc Code	
LG	9		
68958	2		
69893	7		5

D3591-1	Manufactured	No	210	Each	21.0000	2	2	

Bushing

Location	Loc Qty	Loc Code	
ST068	21		
57350	1		
66147	20		

ALS4-1032-130	Purchased	No	230	Each	3,132.000	20	20	

Insert

Location	Loc Qty	Loc Code	
ST281	1008		
117331	8		
118386	1000		
ST282	2124		X26
117717	124		
118237	1744		
118312	256		

11/07/28

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Dart Aerospace Ltd

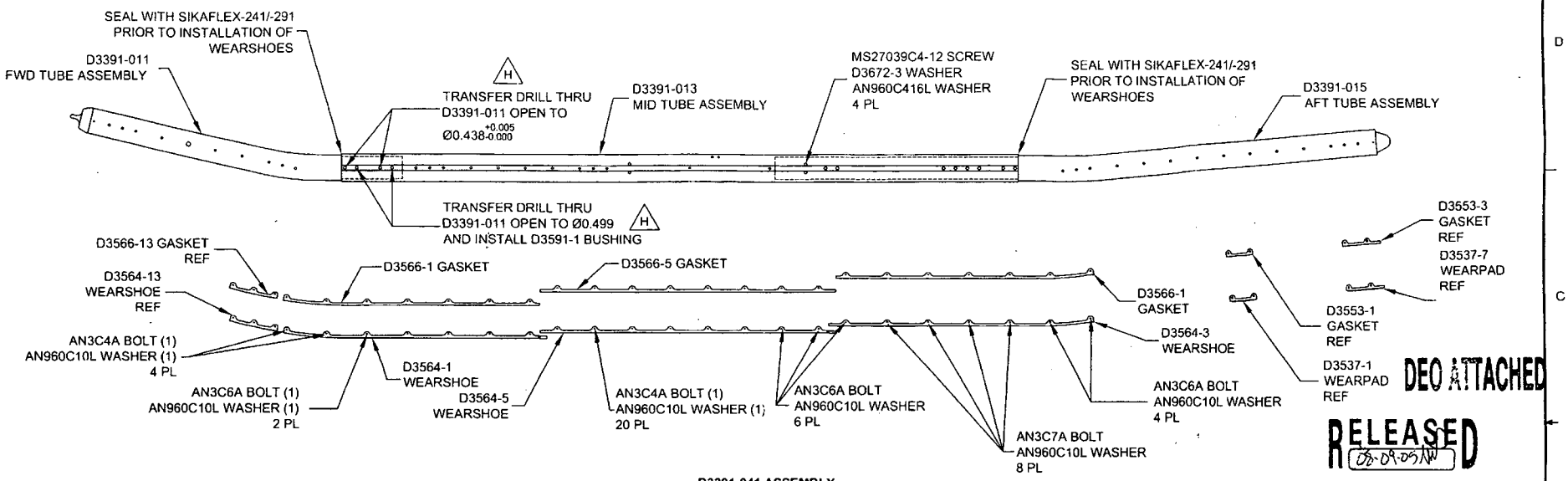
W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector
11/07/25	230	Assemble with D3564-5 / B708644 wearplate D3566-5 / B68961 GASKET	MH MH	11/07/28	X1 X1		
11/07/25	230	Assemble with AN3C-4A / M117795 bolts NAS1149C0332R / M118306 washer	MH MH	11/07/28	X12 X12		

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries



DEO ATTACHED

RELEASED 08-09-05 NW

D3391-041 ASSEMBLY

wo 72319

D3391-041 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

QTY -041	PART NUMBER	DESCRIPTION
X	D3391-041	FLOAT SKIDTUBE ASSEMBLY
1	D3391-011	FWD TUBE ASSEMBLY
1	D3391-013	MID TUBE ASSEMBLY
1	D3391-015	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
1	D3566-5	GASKET
2	D3591-1	BUSHING
4	D3672-3	WASHER
24	AN3C4A	BOLT
12	AN3C6A	BOLT
8	AN3C7A	BOLT
44	AN960C10L	WASHER
4	MS27039C4-12	SCREW
4	AN960C416L	WASHER

GENERAL NOTES

1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.

REV.	DESCRIPTION	BY	DATE
H	DRAWING UPDATED TO CURRENT STANDARDS. SHT 1 PL ADDED D3591-1 BUSHING. ZN C6 Ø0.438 DIM WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING. SHT 2 PL ADDED D3591-1 BUSHING. ZN C6 Ø0.438 DIM WAS 4 PL. ADDED Ø0.499 DIM AND D3591-1 BUSHING. (FOR FURTHER INFO SEE DSI 9364 & NCR 08-074)	AJS	08.08.20
G	REPLACE NAS INSERTS W/ AELS INSERTS SWITCH TO D3670-XXXX SPACERS FOR INSTALLING FLOAT BAGS, DWG REORGANIZED FOR CLARITY	DC	07.07.31
F	ADD SS WEARSHOE, GASKET REMOVE FWD SADDLE HOLE -011/-021	PH	07.01.18
E	CHANGE TOLERANCE, EASE MANUFACTURE	PH	06.04.25
D	UPDATE TOLERANCE, CHANGE HOLE SIZE	PH	06.01.23
C	LENGTHEN AFT EXTENSION	PH	05.09.27
B	DRAWING UPDATES	PH	05.06.10
A	NEW ISSUE	PH	05.02.07

DESIGN	PH
DRAWN	AJS
CHECKED	
MFG. APPR.	
APPROVED	
DE APPR.	
DATE	08.08.20

DART AEROSPACE USA, INC
PORT HADLOCK, WA

DRAWING NO. D3391 REV. H
SHEET 1 OF 8
TITLE 412 FLOAT SKIDTUBE SCALE NTS

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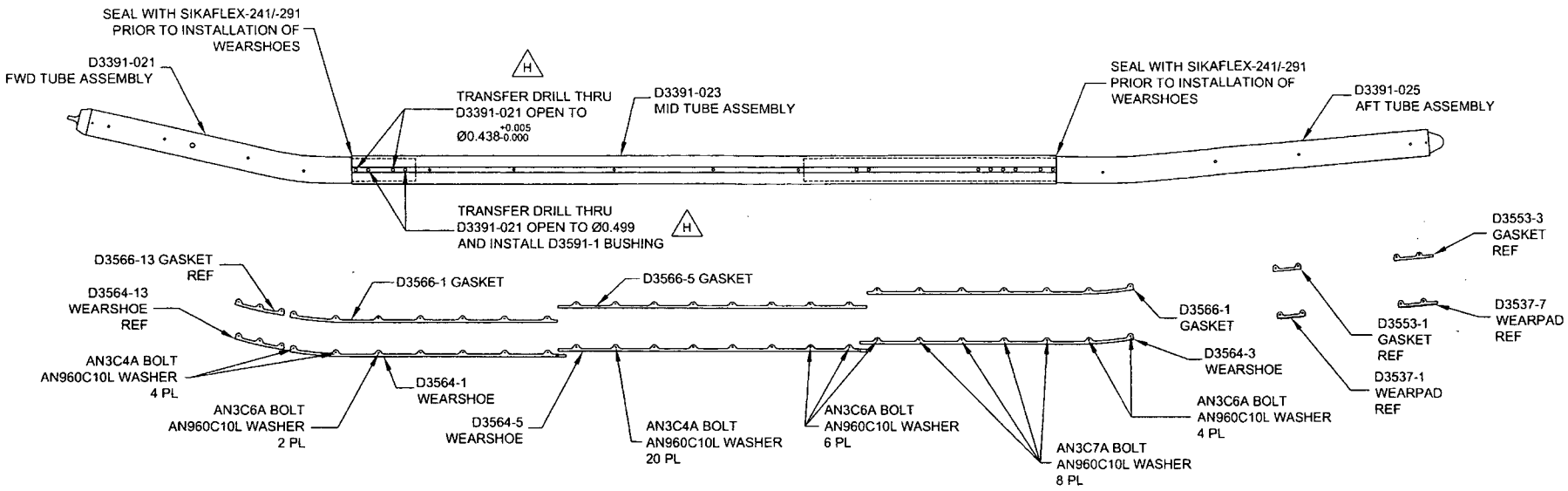

D3391-043 ASSEMBLY

D3391-043 FLOAT SKIDTUBE ASSEMBLY PARTS LIST

QTY -043	PART NUMBER	DESCRIPTION
X	D3391-043	FLOAT SKIDTUBE ASSEMBLY
1	D3391-021	FWD TUBE ASSEMBLY
1	D3391-023	MID TUBE ASSEMBLY
1	D3391-025	AFT TUBE ASSEMBLY
1	D3564-1	WEARSHOE
1	D3564-3	WEARSHOE
1	D3564-5	WEARSHOE
2	D3566-1	GASKET
1	D3566-5	GASKET
2	D3591-1	BUSHING
24	AN3C4A	BOLT
12	AN3C6A	BOLT
8	AN3C7A	BOLT
44	AN960C10L	WASHER

GENERAL NOTES

1) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
POWDER COAT WHITE (4.3.5.1) PER DART QSI 005 4.3
2) SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS. COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.
3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
4) UNITS: INCHES UNLESS OTHERWISE NOTED
5) USE DART DRILL TEMPLATE DT8217 TO LOCATE AND DRILL Ø0.297 SIZE HOLES FOR WEARSHOE INSERTS. C'BORE AS NOTED AND INSTALL INSERTS EXCEPT WHERE INDICATED.

12319

DEO ATTACHED

RELEASED 08.09.05 NP

DESIGN	PH	DART AEROSPACE USA, INC
DRAWN	AJS	PORT HADLOCK, WA
CHECKED		DRAWING NO. REV. H
MFG. APPR.		D3391 SHEET 2 OF 8
APPROVED		TITLE SCALE
DE APPR.		412 FLOAT SKIDTUBE NTS
DATE	08.08.20	

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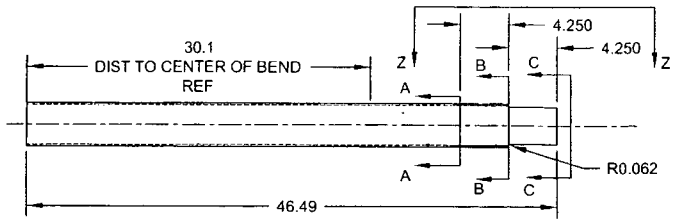
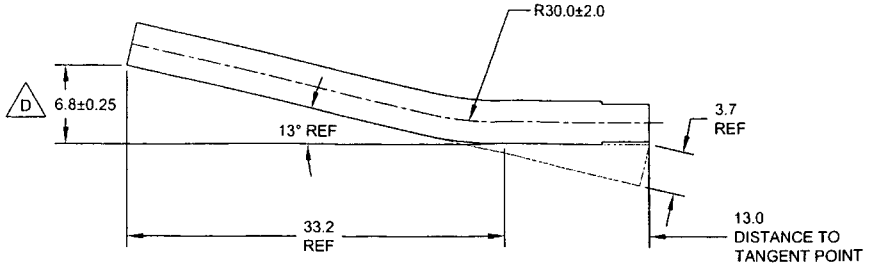
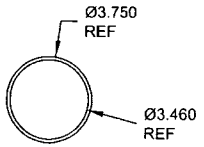


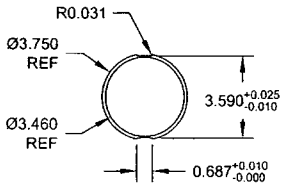
D3391-1 CUTTING DETAIL
(MAKE FROM D6013-047 SKIDTUBE MATERIAL)



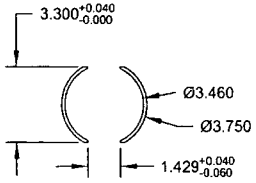
D3391-011/-021 BENDING DETAIL
(MAKE FROM D3391-1)



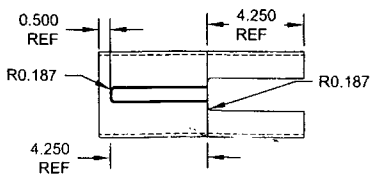
SECTION A-A
SCALE 2X



SECTION B-B
SCALE 2X



SECTION C-C
SCALE 2X



VIEW Z-Z
SCALE 2X

DEO ATTACHED

RELEASED
08.09.05 TW

7239

DESIGN	PH	**DART AEROSPACE USA, INC** PORT HADLOCK, WA
DRAWN	AJS	
CHECKED		DRAWING NO. D3391 — REV. H — SHEET 3 OF 8
MFG. APPR.		
APPROVED		TITLE: 412 FLOAT SKIDTUBE — SCALE: NTS
DE APPR.		
DATE 08.08.20		

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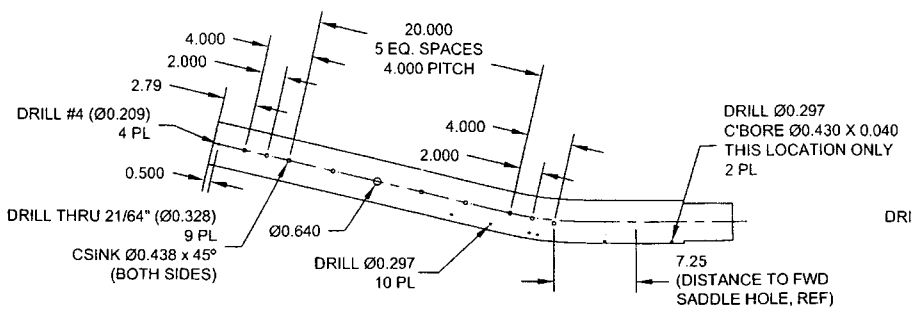
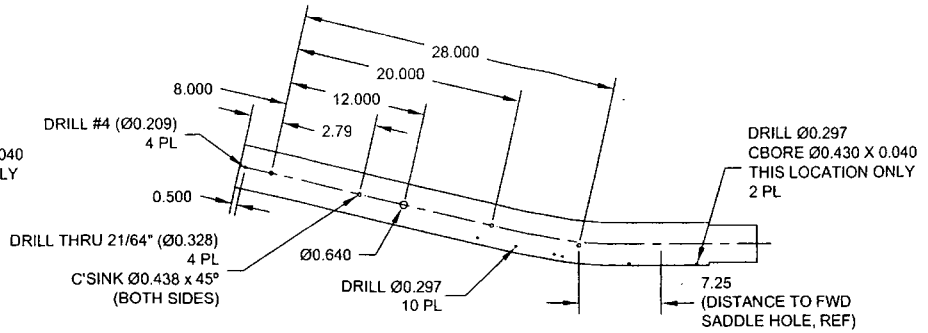
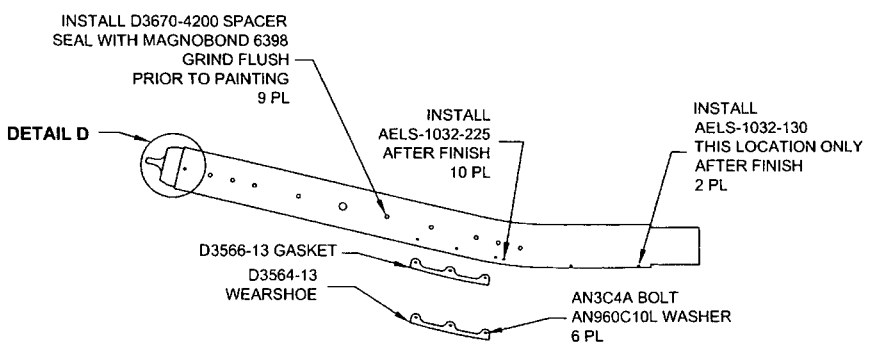


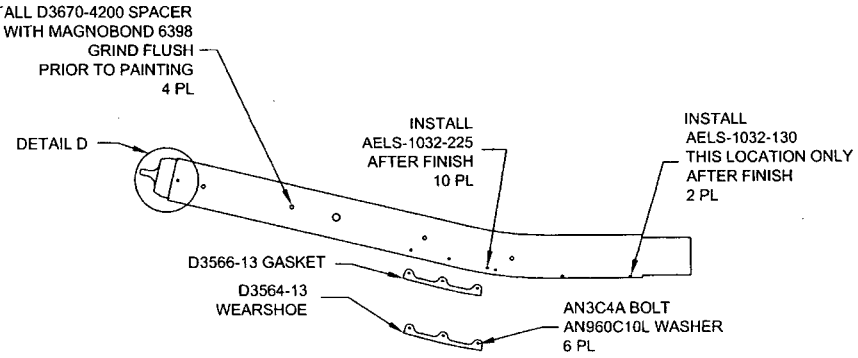
D3391-011 DRILLING DETAIL



D3391-021 DRILLING DETAIL



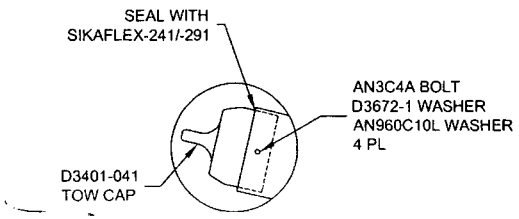
D3391-011 ASSEMBLY DETAIL



D3391-021 ASSEMBLY DETAIL

D3391-011/-021 FWD TUBE ASSEMBLY PARTS LIST

QTY - 011	QTY - 021	PART NUMBER	DESCRIPTION
X		D3391-011	FWD TUBE ASSEMBLY
	X	D3391-021	FWD TUBE ASSEMBLY
1	1	D6013-047	FWD TUBE
1	1	D3401-041	TOW CAP
1	1	D3564-13	WEARSHOE
1	1	D3566-13	GASKET
9	4	D3670-4200	SPACER
4	4	D3672-1	WASHER
10	10	AN3C4A	BOLT
10	10	AN960C10L	WASHER
2	2	AELS-1032-130	INSERT
10	10	AELS-1032-225	INSERT



DETAIL D
SCALE 2X

7239

DEO ATTACHED

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DESIGN	PH	**DART AEROSPACE USA, INC** PORT HADLOCK, WA
DRAWN	AJS	
CHECKED		DRAWING NO. REV. H
MFG. APPR.		D3391 SHEET 4 OF 8
APPROVED		TITLE SCALE
DE APPR.		412 FLOAT SKIDTUBE NTS
DATE	08.08.20	

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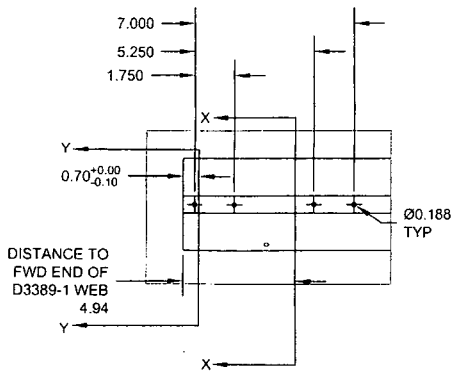
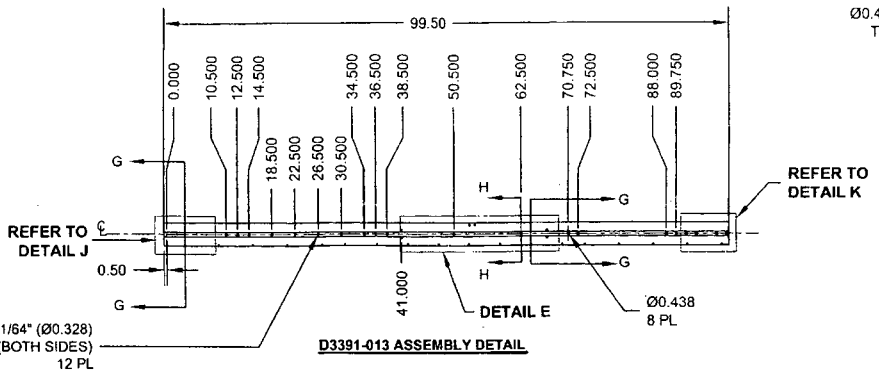
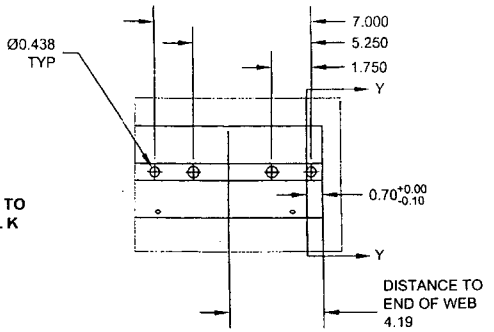


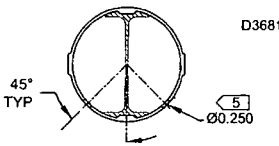
DETAIL J
SCALE 4X



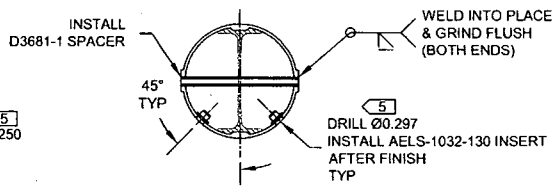
D3391-013 ASSEMBLY DETAIL



DETAIL K
SCALE 4X



SECTION G-G
SCALE 5X



SECTION H-H 12 PL
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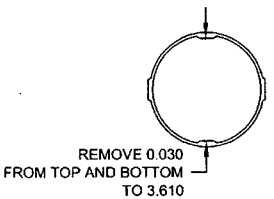
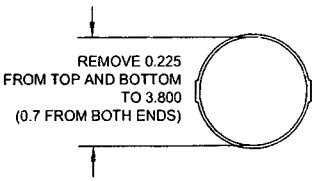


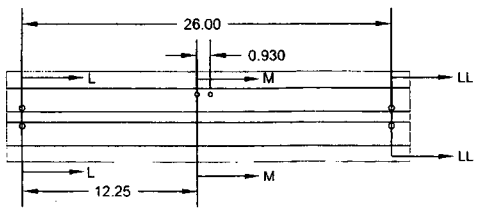
SECTION X-X
SCALE 5X



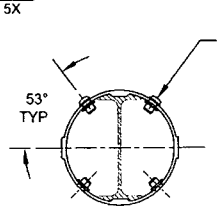
SECTION Y-Y
SCALE 5X

D3391-013 MID TUBE ASSEMBLY PARTS LIST

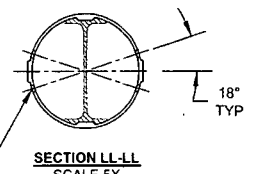
QTY -013	PART NUMBER	DESCRIPTION
X	D3391-013	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
4	D3672-1	WASHER
4	D3672-3	WASHER
12	D3681-1	SPACER
24	AELS-1032-130	INSERT
4	ALS4-428 165	INSERT
4	AN960C10L	WASHER
4	AN960C416L	WASHER
4	MS27039C1-09	SCREW
4	MS27039C4-08	SCREW



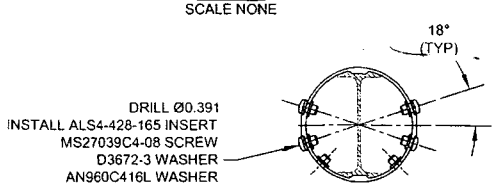
DETAIL E
SCALE NONE



SECTION M-M
SCALE 5X



SECTION LL-LL
SCALE 5X



SECTION L-L
SCALE 5X

DEO ATTACHED

RELEASED

72319

D3391-013 MID TUBE ASSEMBLY

1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/-291 PER QSI 015
3) WELDING: PER DART QSI 004

DESIGN	PH	**DART AEROSPACE USA, INC** PORT HADLOCK, WA
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APPROVED		TITLE 412 FLOAT SKIDTUBE SCALE NTS
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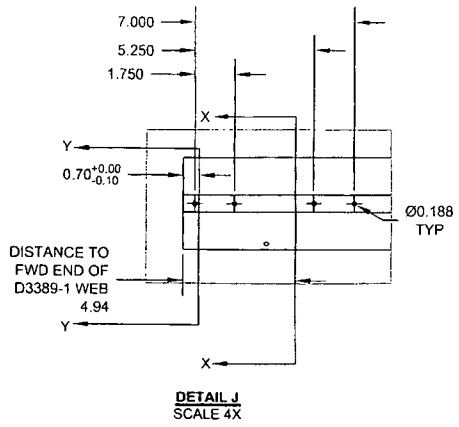
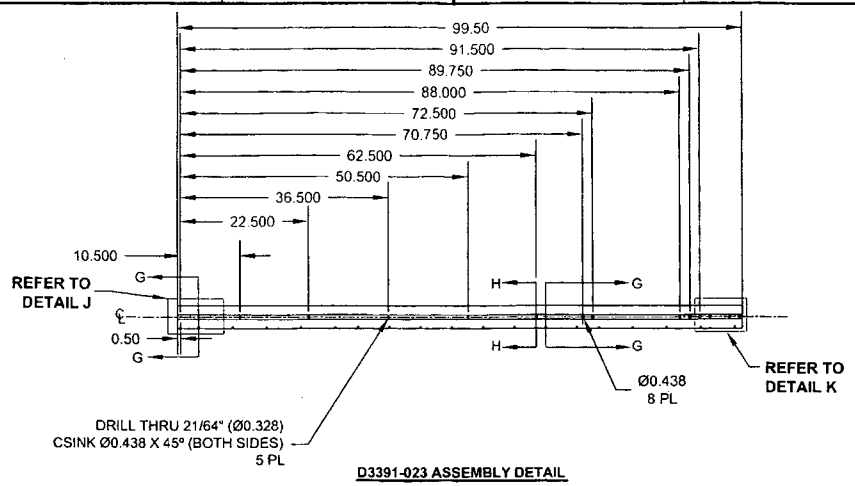
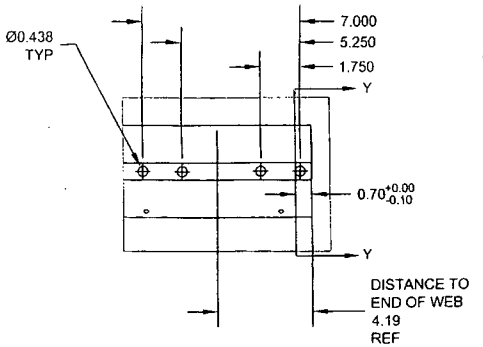


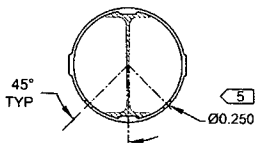
DETAIL J
SCALE 4X



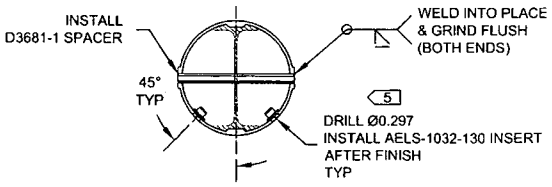
D3391-023 ASSEMBLY DETAIL



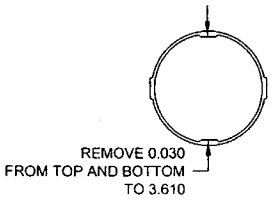
DETAIL K
SCALE 4X



SECTION G-G
SCALE 5X



SECTION H-H 5 PL
SCALE 5X



SECTION X-X
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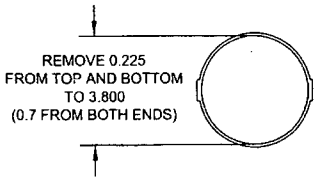

SECTION Y-Y
SCALE 5X

D3391-023 MID TUBE ASSEMBLY PARTS LIST

QTY - 023	PART NUMBER	DESCRIPTION
X	D3391-023	MID TUBE ASSEMBLY
1	D2500-1-100	EXTRUSION
1	D3389-1	WEB
5	D3681-1	SPACER
20	AELS-1032-130	INSERT

D3391-023 MID TUBE ASSEMBLY

1) MATERIAL: MAKE FROM D2500-1-100 EXTRUSION
2) INSTALL D3389-1 WEB TO OUTER TUBE USING SIKAFLEX-241/-291 PER QSI 015
3) WELDING: PER DART QSI 004

DEO ATTACHED

RELEASED 08.09.05.14

X2319

DESIGN	PH	DART AEROSPACE USA, INC
DRAWN	AES	PORT HADLOCK, WA
CHECKED		DRAWING NO. D3391 REV. H
MFG. APPR.		SHEET 6 OF 8
APPROVED		TITLE 412 FLOAT SKIDTUBE SCALE NTS
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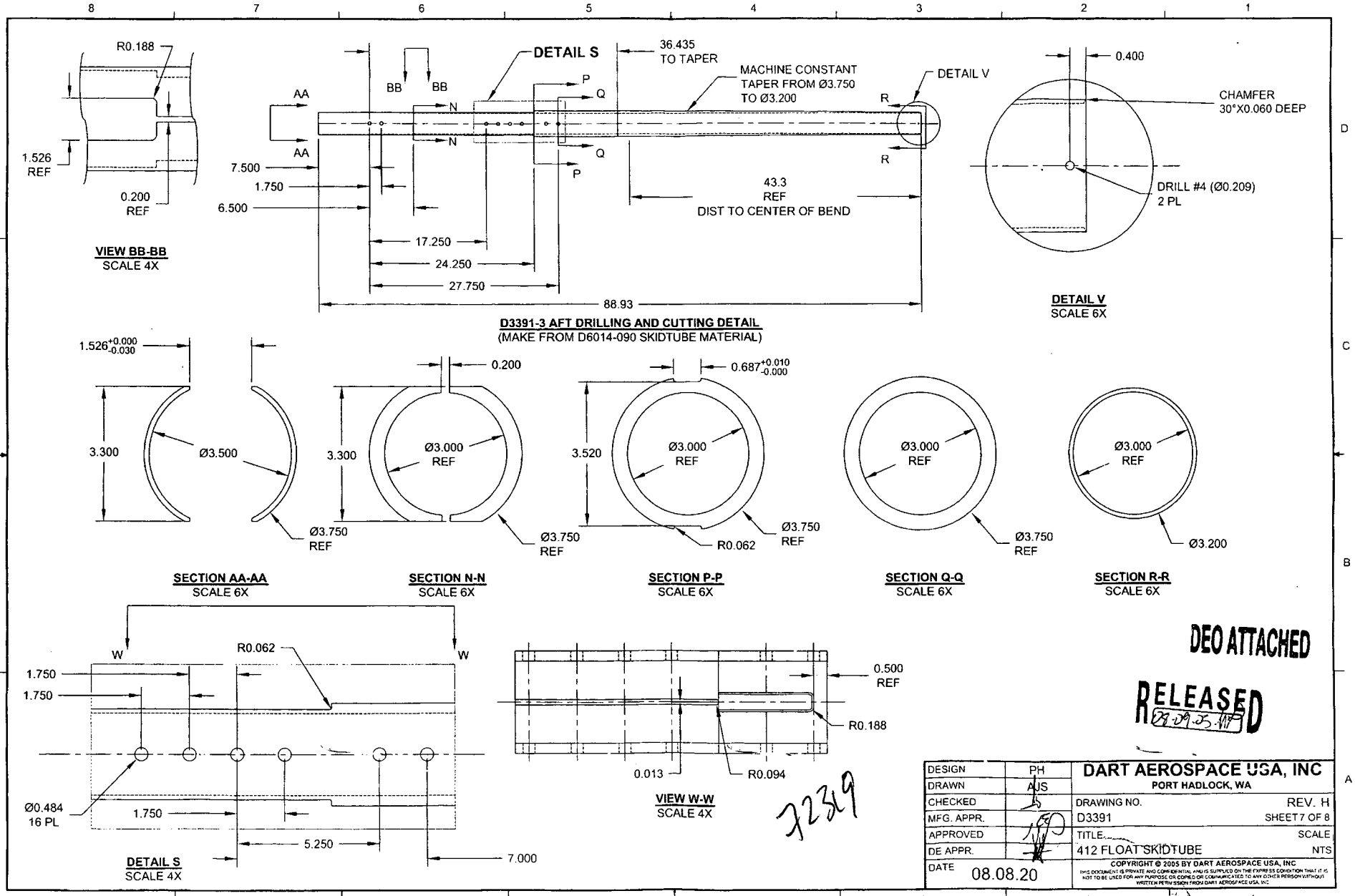

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RELEASED 08.09.05.117

DESIGN	PH	DART AEROSPACE USA, INC
DRAWN	AJS	PORT HADLOCK, WA
CHECKED		DRAWING NO. D3391 REV. H
MFG. APPR.		SHEET 7 OF 8
APPROVED		TITLE. 412 FLOAT SKIDTUBE SCALE NTS
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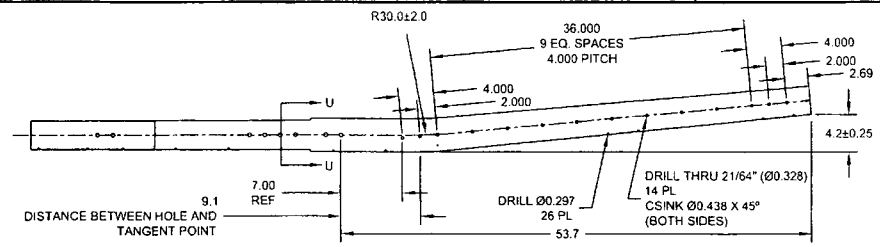
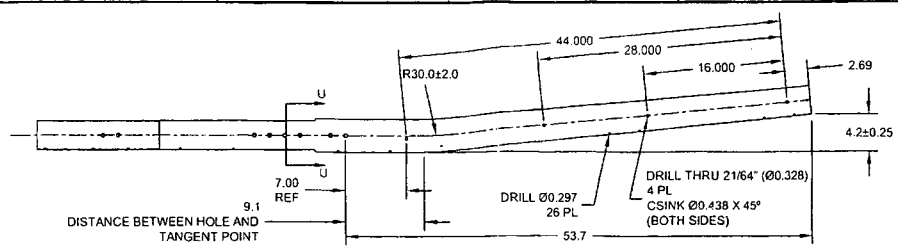
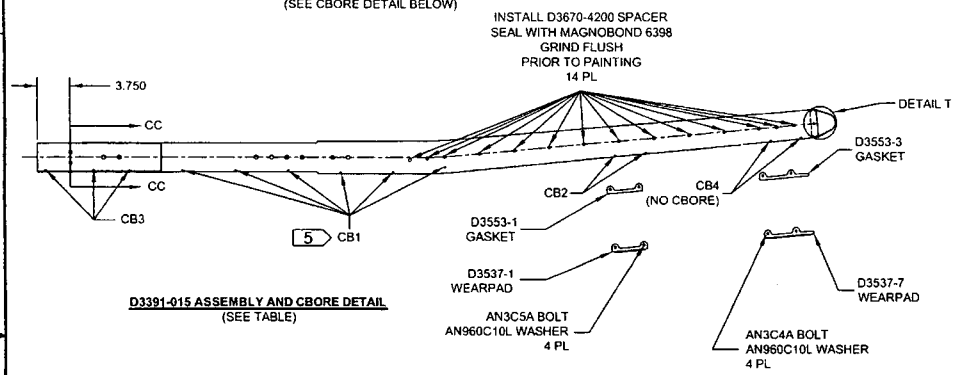


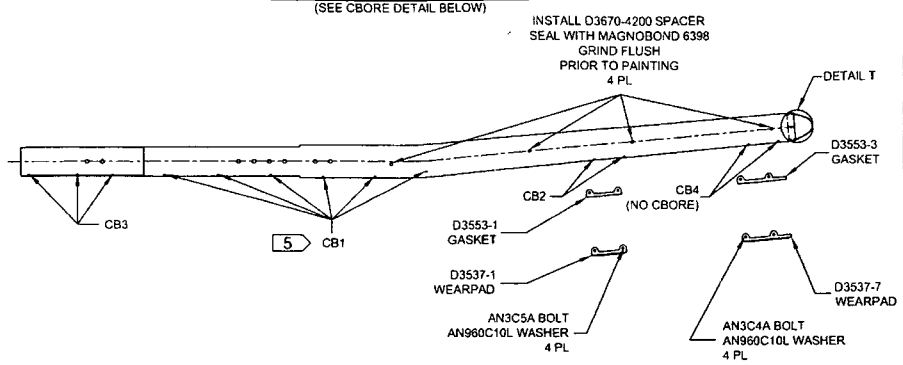
D3391-015 BENDING AND DRILLING DETAIL
(SEE CBORE DETAIL BELOW)



D3391-025 BENDING AND DRILLING DETAIL
(SEE CBORE DETAIL BELOW)



D3391-015 ASSEMBLY AND CBORE DETAIL
(SEE TABLE)



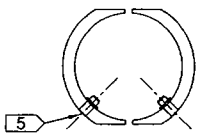
D3391-025 ASSEMBLY AND CBORE DETAIL
(SEE TABLE)

D3391-015/-025 AFT TUBE ASSEMBLY PARTS LIST

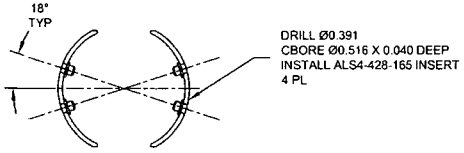
QTY - 015	QTY - 025	PART NUMBER	DESCRIPTION
X		D3391-015	AFT TUBE ASSEMBLY
	X	D3391-025	AFT TUBE ASSEMBLY
1	1	D6014-090	AFT TUBE
1	1	D2646	AFT CAP
1	1	D3537-1	WEARPAD
1	1	D3537-7	WEARPAD
1	1	D3553-1	GASKET
1	1	D3553-3	GASKET
14	4	D3670-4200	SPACER
2	2	D3672-1	WASHER
14	14	AELS-1032-130	INSERT
12	12	AELS-1032-225	INSERT
4		ALS4-428-165	INSERT
6	6	AN3C4A	BOLT
4	4	AN3C5A	BOLT
10	10	AN960C10L	WASHER

C'BORE HOLES MARKED CB1-CB4 AS FOLLOWS AND
INSTALL AELS-1032-XXX AFTER FINISH AS NOTED

HOLES MARKED	QTY D3391-015	QTY D3391-025	CBORE	P/N
CB1	12	12	Ø0.430 X 0.170	AELS-1032-225
CB2	4	4	Ø0.430 X 0.170	AELS-1032-130
CB3	6	6	Ø0.430 X 0.040	AELS-1032-130
CB4	4	4	NONE	AELS-1032-130



SECTION U-U
SCALE 3X



SECTION CC-CC
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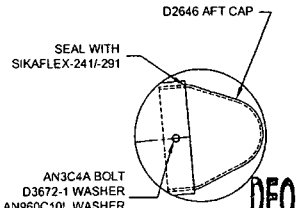

DETAIL T
SCALE 4X

DEO ATTACHED

RELEASED
08-09-05

7234

DESIGN	PH	**DART AEROSPACE USA, INC** PORT HADLOCK, WA
DRAWN	AJS	
CHECKED		DRAWING NO. D3391 REV. H
MFG. APPR.		SHEET 8 OF 8
APPROVED		TITLE 412 FLOAT SKIDTUBE SCALE NTS
DE APPR.		
DATE	08.08.20	

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DRAWING NO.	TITLE	REV. H	DART AEROSPACE USA, INC	D.E.O. NO.	SHEET NO.	SCALE
D3391	412 FLOAT SKIDTUBE		ENGINEERING ORDER	D3391-H-1	SHEET 1 OF 1	NTS

DRAWN	CHECKED	MFG. APPR.	APPROVED	DE APPR.
DATE 09.09.23	DATE 09.09.24	DATE 09/09/25	DATE 09/09/30	DATE 09/09/30

PURPOSE:
LPS-3 IS NO LONGER USED DURING ASSEMBLY OF D3391-041/-043 SKIDTUBES.

RELEASED
2010 -02- 02
MP

CHANGE:
AMEND NOTE 2 OF D3391-041/-043 SKIDTUBE ASSEMBLIES (ZN A6-1, A6-2) AS FOLLOWS:

2) ~~SPRAY INSIDE OF TUBE WITH A COAT OF LPS LABORATORIES "LPS-3" AFTER FINISH AND AFTER INSTALLATION OF INSERTS.~~ COAT ALL EXPOSED FASTENERS WITH LPS LABORATORIES "LPS PROCYON" AFTER FINAL ASSEMBLY, CLEAN EXCESS OFF POWDER COATING WITH MEK DEGREASER.

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NO. 256

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliot
Job number: D70180
Part number: D339[-023
Description: Mid Tube
Welding Process: Tig[✓] Mig[ ]
Base materiel: Aluminum
Current: AC[✓] DC[ ]

TEST REQUIREMENTS AND RESULTS

Visual:	pass[✓] fail[ ]
Penetration:	pass[✓] fail[ ]

UNACCEPTABLE

Cracks:	pass[✓] fail[ ]
Undercut:	pass[✓] fail[ ]
Pin holes:	pass[✓] fail[ ]
Overlap (cold lap)	pass[✓] fail[ ]
Porosity (surface):	pass[✓] fail[ ]
Coloration:	pass[✓] fail[ ]

Qualifier Nathan Lewis **Date of Test Coupon** 11-06-20

Welder Barclay Elliott **Date of Test Coupon** 11-06-20

The above named individual is qualified in accordance with AWS D17.1.2001 to weld

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries